

Amendment and Response  
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### REMARKS

Upon entry of the present amendment, Claims 1, 4 - 8, 12, and 13 are presented for examination in the present application. Claims 1, 4 - 8, 12, and 13 have been amended. Claims 10, 11, and 14 are withdrawn. Claims 2, 3, and 9 have been cancelled. No new matter has been added.

### CLAIM REJECTIONS

For the reasons forth below, the Applicants believe that the rejections of Claims 1, 4 - 8, 12, and 13 should be withdrawn and that the claims are in condition for allowance.

#### A. 35 U.S.C. § 102(b)

The Examiner rejected Claims 1, 4 - 8, and 12 under 35 U.S.C. § 102(b) as being anticipated by printed publication Tamura *et al.* ("Flat-ban ferromagnetism in quantum dot superlattices", Phys. Rev. B, Vol. 65, 085234, 2002) (hereinafter "Tamura"). In order to anticipate a claim under 35 U.S.C. § 102(b), a reference must disclose each and every element of a claim. M.P.E.P. § 2131. As discussed below, this rejection is respectfully traversed.

With respect to Claim 1, Tamura lacks one or more features of the claimed invention. Tamura discloses ferromagnetism in quantum dot arrays. In particular, Tamura discloses a ferromagnetic state created by arranging quantum dots on the nodes of "well-ordered lattices", specifically kagomé lattices, as shown in FIG. 1(b), and considers a Hubbard model (1) for these lattices, shown on page 085324-2. Tamura discloses quantum dot arrays having high precision lattice structures (*i.e.*, no fluctuation in lattice structure). Tamura does not disclose a magnetic body "wherein the quantum dots are spatially arranged permitting a fluctuation in a range that satisfies a condition in which a center-to-center distance between nearest quantum dots is greater than a size of the respective quantum dots along a confinement direction of the at least one electron and at most  $1/\pi$  times a Fermi wave length of a conductive electron of the conductive electron region" as claimed in amended Claim 1. None of the drawings or corresponding sections of the detailed description of Tamura cited

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by the Examiner show otherwise. Therefore, the Applicants respectfully request that the Examiner withdraw the rejection of Claim 1.

Claims 4 - 8 and 12 depend from Claim 1 and are patentable over Tamura for at least the same reasons as stated above for Claim 1. Therefore, the Applicants respectfully request that the Examiner withdraw the rejection of Claims 4 - 8 and 12.

**B. 35 U.S.C. 103(a)**

The Examiner rejected Claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Tamura. For at least the following reasons, the Applicants respectfully traverse this rejection and request reconsideration and withdrawal thereof. The Examiner has not established a prima facie case of obviousness. To establish a prima facie case of obviousness, the Examiner must show that: (1) there is some suggestion or motivation to one of ordinary skill in the art to combine the teachings of the references; (2) there is a reasonable expectation of success; and (3) the references teach or suggest all of the claimed limitations. M.P.E.P. § 2142.

The Applicants respectfully submit that Tamura fails to disclose or suggest all of the limitations of Claim 13 as amended herein. In particular, Tamura does not disclose or suggest the ferromagnetism of a magnetic body permitting fluctuation in the lattice structure of quantum dots. Tamura does not disclose or suggest a magnetic device "wherein the quantum dots are spatially arranged permitting a fluctuation in a range that satisfies a condition in which a center-to-center distance between nearest quantum dots is greater than a size of the respective quantum dots along a confinement direction of the at least one electron and at most  $1/\pi$  times a Fermi wave length of a conductive electron of the conductive electron region" as claimed in amended Claim 13. Tamura does not disclose or suggest the invention as claimed in Claim 13 as amended herein. Therefore, the Applicants respectfully request that the Examiner withdraw the rejection of Claim 13.

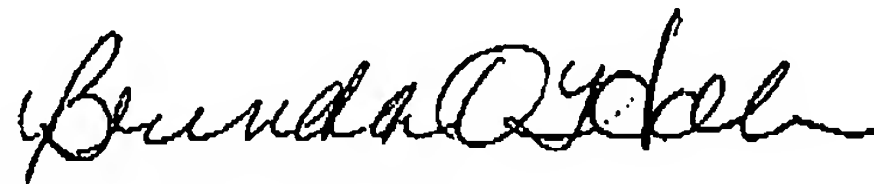
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**CONCLUSION**

In light of the foregoing, Claims 1, 4 - 8, 12 and 13 are presented for examination in the application. It is respectfully submitted that the presented claims are allowable and a notice of allowance is respectfully requested. The Examiner is invited and encouraged to contact the undersigned attorney of record at (404) 685-6799 if such contact will facilitate examination of the application. For all fees required in connection with this filing, the Commissioner is hereby authorized to charge Deposit Account No. 11-0855.

Respectfully submitted,



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